

(19) World Intellectual Property
Organization
International Bureau



20 JUN 2005

(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/058941 A3

(51) International Patent Classification⁷: C12Q 1/68, C12P
19/34, C07H 21/04, 21/00

(21) International Application Number:
PCT/US2003/040378

(22) International Filing Date:
18 December 2003 (18.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/435,919 20 December 2002 (20.12.2002) US

(71) Applicant (for all designated States except US): Q-RNA,
INC. [US/US]; 3960 Broadway, Suite 408, New York, NY
10032 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): ZEILER, Brian, Neil
[US/US]; Q-RNA, Inc., 3960 Broadway, Suite 408, New
York, NY 10032 (US).

(74) Agents: GAUDET, Stephen, J. et al.; Perkins, Smith &
Cohen, LLP, One Beacon Street, Boston, MA 02108-3106
(US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
25 November 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND KITS FOR MAKING DOUBLE STRANDED RIBONUCLEIC ACIDS

(57) Abstract: Embodiments of the present invention are directed to methods and kits for the generation of double stranded RNA by RNA dependent RNA polymerases. The methods and kits feature exponential generation of such RNAs through simple steps. The RNA is suitable for interference with expression in cells.



WO 2004/058941 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/40378

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12Q 1/68; C12P 19/34; C07H 21/04, 21/00

US CL : 435/6, 91.1, 91.2; 536/22.1, 24.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/6, 91.1, 91.2; 536/22.1, 24.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	AGRAWAL et al. Microbiology and Molecular Biology Reviews, December 2003, Vol. 67(4), pages 657-685.	1-26
X	US 5,744,308 A (GUILLOU-BONNICI et al.) 28 April 1998 (28, 04, 1998), column 11, lines 61-67 to column 12, lines 1-29.	1-2, 5, 8-9
X	US 5,620,851 A (AXELROD et al.) 15 April 1997 (19, 04, 1997), column 12, lines 9-14 and column 17, claims 19 and 21	14-22
Y	US 5,637,459 A (BURKE et al.) 10 June 1997 (10, 06, 1997), column 2, lines 30-44, column 4, lines 5-11, column 6, lines 40-51.	10-12 and 23-25

<input type="checkbox"/> Further documents are listed in the continuation of Box C.	<input type="checkbox"/> See patent family annex.
* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 16 April 2004 (16.04.2004)	Date of mailing of the international search report 07 OCT 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703)305-3230	Authorized officer Gary Ben Zion Telephone No. (571) 272-1600

INTERNATIONAL SEARCH REPORT

PCT/US03/40378

Continuation of B. FIELDS SEARCHED Item 3:

WEST 2.0 AND STN SEARCHED:

USPATFUL, MEDLINE, CAPLUS, EMBASE, BIOSIS

search terms: RNA polymerase, modification, nucleotide, amplification, 2'-O-methyl, 2'-fluoro, 2'-amino, 2'-azido